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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,603

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Makoto Iyoda

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EXAMINER

BARROW, AMANDA J

ART UNIT

PAPER NUMBER

1795

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,603	<b>Applicant(s)</b> IYODA ET AL.	
	<b>Examiner</b> AMANDA BARROW	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Application***

1. The Applicant's amendment filed on 7/2/09 was received. The abstract and specification were amended to correct grammatical and idiomatic errors. Claims 1, 2, 4, 6, 7, 9 and 10 have been amended. Claim 8 is cancelled. The objections on claims 9 and 10 are withdrawn as the claims have been amended.
2. The texts of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on 4/3/2009.

### ***Claim Rejections - 35 USC § 103***

3. The claim rejections under 35 U.S.C. 103(a) as being unpatentable over Becerra or in the alternative, Becerra in view of King on claims 1-3 and 8 are withdrawn as the claims have been amended or cancelled. However, upon further consideration, a new ground of rejection is made in view of Becerra in view of Cornell.
4. Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becerra et al. (US 2004/0072049) in view of Cornell (US Patent 4,079,729).

Regarding claim 1, Becerra teaches a fuel container and delivery assembly (1302) that contains a fuel bladder 1305a that holds and supplies a liquid fuel such as methanol for the purpose of electric power generation in a fuel cell system (paragraphs 4-6 and 65-67; illustrated in Figure 13). Becerra teaches a second bladder 1305b ("product holding section") that is

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provided to receive effluent from the cathode and/or anode aspect of the fuel cell 1301 via the effluent inlet 1306b. Becerra teaches that the effluent can be comprised of water (paragraph 66). Figure 13 illustrates that both the fuel bladder 1305a and the second bladder 1305b ("product holding section") have an outer peripheral portion.

Becerra teaches that the fuel substance may be mixed with one or more additives that increase the fuel's detectability in case the fuel escapes from the container and that these safety-enhancing additives should be stored and maintained separately from the fuel. Such safety enhancing additives include a color additive (paragraphs 11 and 12). The leakage of the liquid fuel or water will be detected by a difference in the change of color of the coloring additive (Becerra - paragraph 11). As the color additive is to be stored and maintained separately from the fuel, it would inherently have to be placed in the outer peripheral portion of the fuel bladder 1305a and second bladder 1305b ("product holding section") as they are stored next to one another in the same container. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities or possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999).

Becerra teaches that the liquid fuel is methanol (paragraph 4) but does not recite what the specific coloring additive is. Cornell teaches that a color indicator can be made of a liquid containing cobalt chloride and water (column 4, lines 3-24). Therefore, it would have been obvious to a person of ordinary skill in the art to use aqueous cobalt chloride as a color indicator as it provides a substantial color change in the aqueous phase (blue to pink) thus indicating that the cobalt chloride has mixed with water and that there is moisture present (i.e. - a leak) (Cornell

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– column 4, lines 3-24). Inherently, if the aqueous cobalt chloride solution is mixed with methanol, it would change a different color (pink to red).

Thus, by using the specific color additive as taught by Cornell in the system of Becerra, it would be inherent to the system that a different color change would occur if water was leaked instead of fuel and vice versa. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities or possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999).

Regarding claim 2, Becerra teaches that the color additive should be stored and maintained separately from the fuel. The leakage of the liquid fuel or water will be detected by a difference in the change of color of the coloring additive (Becerra - paragraph 11). As the color additive is to be stored and maintained separately from the fuel, it would inherently have to be placed in the outer peripheral portion of the fuel bladder 1305a and second bladder 1305b ("product holding section") as they are stored next to one another in the same container. Additionally, it is the position of the Examiner that the coloring additive would be placed around the entire outer peripheral portion of both bladders because if only part of the outer peripheral portion was covered, then all leaks would not be detected which is the purpose of Becerra's use of this safety precaution (see paragraphs 11 and 12). A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities or possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999).

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Regarding claim 3, Becerra teaches that fuel is supplied from the fuel bladder 1305a via the fuel outlet 1306a (“connection port”) to the fuel cell body (1301). In the rejection of claims 1 and 2, it was shown that Becerra teaches that the color additive/dye (“coloring agent”) can be placed in part of or in the entire “outer peripheral portion.” Therefore, it would be obvious that the color agent would be “in the neighborhood” of the fuel outlet 1306a (“connection port”) as the fuel outlet is connected to the fuel bladder 1305a.

Regarding claim 4, Becerra does not positively recite a “coloring agent holding section,” however, it is the position of the Examiner that such a holding section would be inherent to the system of Becerra as Becerra notes that the color additives should be stored and maintained separately from the fuel (paragraph 12).

Regarding claim 6, Becerra teaches that the liquid fuel is methanol (paragraph 4) but does not recite that the coloring additive is a cobalt chloride aqueous solution. Cornell teaches that an indicator can be made of a liquid containing cobalt chloride and water (column 4, lines 3-24). Therefore, it would have been obvious to a person of ordinary skill in the art to use aqueous cobalt chloride as a color indicator as it provides a substantial color change in the aqueous phase (blue to pink) thus indicating that the cobalt chloride has mixed with water and that there is moisture present (i.e. - a leak) (Cornell – column 4, lines 3-24).

Regarding claim 7, Becerra teaches that part of the water generated by the fuel container and delivery assembly 1302 is configured to accept water from the cathode and/or anode aspect of the fuel cell 1301 (paragraph 66; also see Figure 13). If one uses the inherent holding section of Becerra (see the rejection of claim 4), it would have been obvious that this “coloring agent holding section” could be configured to accept water from the fuel container and delivery

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assembly 1302 in order to generate the cobalt chloride aqueous solution. Cornell provides the motivation for this in that cobalt chloride provides a substantial color change when mixed with water and/or organic solvent indicating the presence of these liquids thereof (i.e. - a leak) (Cornell – column 4, lines 3-24).

5. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becerra et al. (US 2004/0072049) (hereinafter “Becerra”) in view of Cornell (US Patent 4,079,729) as applied to claims 1-4, 6 and 7, and further in view of Yoshiki et al. (Japanese Patent Application 03-015467) (hereinafter “Yoshiki”).

Regarding claim 9, Becerra does not positively recite that a “visual recognition window” is present; however, Yoshiki teaches a layer that contains a soluble coloring substance when dissolved by a liquid (“coloring agent holding section”) for the purposes of leak detection that can be visually recognized from the outside (“visual recognition window”) (abstract). It would have been obvious to adapt the visual recognition window of Yoshiki to the system of Becerra in order to be able to visually recognize from the outside that there is a leak (Yoshiki – abstract).

Regarding claim 12, Becerra teaches a liquid feed fuel cell to be used with a portable, handheld device (paragraph 10) that includes a fuel cell system which generates power and has a fuel container and delivery assembly 1302 that may be a cartridge which is inserted into the fuel cell and can be removed and replaced with a full cartridge when empty (paragraph 65). Becerra also teaches that the fuel container and delivery assembly 1302 may be a type of canister or refueling device that can be attached to the fuel cell system at an appropriate location (paragraph 65). Becerra teaches that there is a fuel cell 1301 that generates electric power by using the

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liquid fuel supplied from the fuel container and delivery assembly 1302 (paragraph 66). A “container mounting portion” is not labeled in the corresponding figure (Figure 13); however, Becerra states that it is “attached at an appropriate location,” thus a “container mounting portion” must be present.

Becerra does not teach a device-side visual recognition window; however, Yoshiki teaches a layer that contains a soluble coloring substance when dissolved by a liquid (“coloring agent holding section”) for the purposes of leak detection that can be visually recognized from the outside (“visual recognition window”) (abstract) (see the rejection of claim 9 for more detail).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becerra et al. (US 2004/0072049) (hereinafter “Becerra”) in view of Cornell (US Patent 4,079,729) as applied to claims 1-4, 6 and 7, and further in view of Hsu (US Patent Application 2003/0097762 A1).

Regarding claims 5, Becerra teaches that the liquid fuel is methanol (paragraph 4) but does recite that the coloring additive contains cobalt chloride in the solid phase. Hsu does teach that cobalt chloride in the solid phase is used as a color indicator (paragraph 27). It would therefore be obvious to a person of ordinary skill in the art to use cobalt chloride as a color indicator as it provides a substantial color change in the solid phase (blue to red) thus indicating that the cobalt chloride has mixed with a liquid and that there is moisture present (i.e. - a leak) (Hsu – paragraph 27).



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7. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becerra et al. in view of Cornell et al. as applied to claims 1-4, 6 and 7 above, and further in view of Ebbeson (US Patent 4,416,617).

Regarding claim 10, Becerra does not teach an absorber for absorbing and retaining the liquid fuel from the fuel bladder 1305a; however, Ebbeson does teach that a fuel container has a fuel absorbing mass (28) that absorbs and retains a liquid fuel that is leaked (column 1, lines 5-12). This fuel absorbing mass could be incorporated into the inherent holding section of Becerra. It would be obvious to a person of ordinary skill in the art to do this for the purpose of not allowing the fuel to leach out of the system (Ebbeson – column 1, lines 28-56).

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becerra et al. (US 2004/0072049) (hereinafter “Becerra”).

Regarding claim 11, Becerra teaches that the fuel container and delivery assembly 1302 may be a cartridge which is inserted into the fuel cell and can be removed and replaced with a full cartridge when empty (paragraph 65). Becerra also teaches that the fuel container and delivery assembly 1302 may be a type of canister, a refueling device that can be attached to the fuel cell system at an appropriate location (paragraph 65). Becerra teaches that there is a fuel cell 1301 that generates electric power by using the liquid fuel supplied from the fuel container and delivery assembly 1302 (paragraph 66). A “container mounting portion” is not labeled in the corresponding figure (Figure 13); however, Becerra states that it is “attached at an appropriate location,” thus a “container mounting portion” must be present.

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***Response to Arguments***

9. Applicant's arguments with respect to claims 1-7 and 9-11 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMANDA BARROW whose telephone number is (571)270-7867. The examiner can normally be reached on 7:30am-5pm EST. Monday-Friday, alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AMANDA BARROW/  
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 1795